

L Number	Hits	Search Text	DB	Time stamp
1	641	plating adj liquid	USPAT	2003/02/24 09:56
2	1	plating adj liquid with chromatogra\$4	USPAT	2003/02/24 10:53
3	1	plating adj liquid same chromatogra\$4	USPAT	2003/02/24 10:00
4	1	(plating adj liquid) same chromatogra\$4	USPAT	2003/02/24 10:01
5	0	(plating adj liquid) same quantif\$4	USPAT	2003/02/24 10:01
6	5	(plating adj liquid) same analy\$4	USPAT	2003/02/24 10:05
7	1	(electroplating adj liquid) same analy\$4	USPAT	2003/02/24 10:05
8	0	(electroplating adj liquid) with chromatogra\$4	USPAT	2003/02/24 10:08
9	2	(electroplating adj solution) with chromatogra\$4	USPAT	2003/02/24 10:08
10	1	(remov\$4 near ion\$4) with quantif\$4	USPAT	2003/02/24 10:56
12	1	(plating adj liquid) and ((remov\$4 near ion\$4) with analy\$4)	USPAT	2003/02/24 10:57
11	112	(remov\$4 near ion\$4) with analy\$4	USPAT	2003/02/24 11:25
13	222083	interference	USPAT	2003/02/24 11:25
14	1923	210/656-659.ccls.	USPAT	2003/02/24 11:26
15	163	interference and 210/656-659.ccls.	USPAT	2003/02/24 11:26
16	173	ion near interference	USPAT	2003/02/24 11:27
17	4	210/656-659.ccls. and (ion near interference)	USPAT	2003/02/24 11:27
18	364058	ion\$4	USPAT	2003/02/24 13:20
19	1	("4326940").PN.	USPAT	2003/02/24 13:20
20	1	ion\$4 and ("4326940").PN.)	USPAT	2003/02/24 13:20

	Type	L #	Hits	Search Text	DBs	Time Stamp
1	BRS	L1	641	plating adj liquid	USPAT	2003/02/24 09:56
2	BRS	L2	1	plating adj liquid with chromatogra\$4	USPAT	2003/02/24 10:53
3	BRS	L3	1	plating adj liquid same chromatogra\$4	USPAT	2003/02/24 10:00
4	BRS	L4	1	(plating adj liquid) same chromatogra\$4	USPAT	2003/02/24 10:01
5	BRS	L5	0	(plating adj liquid) same quantif\$4	USPAT	2003/02/24 10:01
6	BRS	L6	5	(plating adj liquid) same analy\$4	USPAT	2003/02/24 10:05
7	BRS	L7	1	(electroplating adj liquid) same analy\$4	USPAT	2003/02/24 10:05
8	BRS	L8	0	(electroplating adj liquid) with chromatogra\$4	USPAT	2003/02/24 10:08
9	BRS	L9	2	(electroplating adj solution) with chromatogra\$4	USPAT	2003/02/24 10:08
10	BRS	L10	1	(remov\$4 near ion\$4) with quantif\$4	USPAT	2003/02/24 10:56
11	BRS	L12	1	1 and 11	USPAT	2003/02/24 10:57
12	BRS	L11	112	(remov\$4 near ion\$4) with analy\$4	USPAT	2003/02/24 11:25
13	BRS	L13	222083	interference	USPAT	2003/02/24 11:25
14	BRS	L14	1923	210/656-659.ccls.	USPAT	2003/02/24 11:26
15	BRS	L15	163	13 and 14	USPAT	2003/02/24 11:26
16	BRS	L16	173	ion near interference	USPAT	2003/02/24 11:27
17	BRS	L17	4	14 and 16	USPAT	2003/02/24 11:27
18	BRS	L18	364058	ion\$4	USPAT	2003/02/24 13:20
19	IS&R	L19	1	("4326940").PN.	USPAT	2003/02/24 13:20
20	BRS	L20	1	18 and 19	USPAT	2003/02/24 13:20

	Comments	Error Definition	Errors
1			0
2			0
3			0
4			0
5			0
6			0
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18			0
19			0
20			0

	Document ID	Kind Codes	Source	Issue Date	Pages
1	US 6017427 A		USPAT	20000125	8

	Title
1	Apparatus for testing high speed electroplating

	Abstract
1	

	Current OR	Retrieval Classif	Current XRef	Inventor	U
1	204/212			Yamamoto, Tatsuo	<input type="checkbox"/>

	S	C	P	1	2	3	4	5	Image Doc. Displayed	PT
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	US 6017427	<input type="checkbox"/>

	Document ID	Kind Codes	Source	Issue Date	Pages
1	US 5296124 A		USPAT.	19940322	6

	Title
1	Method of in-situ formation of a stable reference electrode for in-tank plating bath analysis

	Abstract
1	

	Current OR	Retrieval Classif	Current XRef	Inventor	U
1	205/219		204/402; 204/412; 204/434; 204/435; 205/704	Eliash, Bruce M. et al.	<input type="checkbox"/>

	S	C	P	1	2	3	4	5	Image Doc. Displayed	PT
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	US 5296124	<input type="checkbox"/>

US-PAT-NO: 6521358

DOCUMENT-IDENTIFIER: US 6521358 B1

TITLE: Lead frame for semiconductor device and method of producing same

----- KWIC -----

The intensity ratios of Pd/Ni disclosed in Table 3 were calculated by standardizing Ni intensity through Pd intensity while using the average value of an area (0.03 to 0.05 μm) where the intensity of secondary ions of Pd and Ni is stable in the SIMS chart of FIGS. 5 and 6. As shown in Table 3, in the test examples, the Ni concentration in Pd plating liquid is reflected in the Ni concentration (Ni content) in the Pd coating. It is found from the analysis by use of the SIMS that the intensity rate of Pd/Ni which is the ratio of the test example 17 to the test example 18 corresponds to a rate of Ni concentration in the Pd coating, so that it is possible to measure the Ni concentration in the Pd coating by use of the SIMS.

US-PAT-NO: 6017427

DOCUMENT-IDENTIFIER: US 6017427 A

TITLE: Apparatus for testing high speed electroplating

----- KWIC -----

For understanding the conditions of the plating liquid, chemical analysis such as titration or instrumental analysis such as ion chromatographic analysis is carried out. Further, a plating test method, which is called a Hull cell test, has been widely used for total research of the characteristics of plating liquid, and observation of the states of electroplating as well as examination and management of the bath composition of the presently used plating liquid and electrodeposition conditions.

US-PAT-NO: 4950504

DOCUMENT-IDENTIFIER: US 4950504 A

TITLE: Mechanical plating with oxidation-prone metals

----- KWIC -----

Using the process of Example 1 with the fluoride etching agent of Example 3, varying quantities of aluminum, tin, and copper were employed in the mechanical plating liquid, and the resulting coated nails were analyzed for content of the coating. The results are set forth below in Table 1.

US-PAT-NO: 4800132

DOCUMENT-IDENTIFIER: US 4800132 A

TITLE: Mechanical plating with oxidation-prone metals

----- KWIC -----

Using the process of Example 1 with the fluoride etching agent of Example 3, varying quantities of aluminum, tin, and copper were employed in the mechanical plating liquid, and the resulting coated nails were analyzed for content of the coating. The results are set forth below in Table 1.

US-PAT-NO: 4788700

DOCUMENT-IDENTIFIER: US 4788700 A

TITLE: Fluorescent X-ray analyzing method of solution specimen and specimen sampler used for the method

----- KWIC -----

For the fluorescent X-ray analysis of a solution specimen, such as a plating liquid for steel plate, analysis has conventionally been made as follows: The liquid specimen is filled in a receptacle and the liquid surface is covered with a film of synthetic resin, etc. The specimen is then placed in a vacuum atmosphere or an atmosphere of helium gas, and primary X-rays have been irradiated through the synthetic resin film. However, since the specimen is in the form of liquid, much care has had to be taken in handling the specimen put into the vacuum or gas atmosphere. Further, it has been very difficult to keep the thickness of the synthetic resin film even or to the keep the condition of the specimen surface constant. Furthermore, there may be many bubbles on the liquid surface. These result in an error of the analyzed value. Particularly, in the so-called ON LINE analysis of a plating liquid, etc., It is extremely difficult to analyze the solution specimen in a vacuum or helium gas atmosphere, and therefore the analysis has been made in the air. Therefore, ON LINE analysis of high chemical elements such as titanium of atomic number 22, or those with atomic numbers less than titanium, has actually been impossible. Any effective correction for light chemical elements has thus not been

possible, and so this affects the precision of analysis for the major component made of a heavier chemical element. The analysis of the entire composition has thus not been possible, and for this reason, the mixing of chemicals, for example, has become difficult.

FIG. 1 is a block diagram showing an embodiment of the process for the fluorescent X-ray analyzing method according to the present invention.

Specimen is dissolved in adequate solvent to obtain the solution specimen, which is filled into a tank 1. The solution specimen is poured into a specimen cup 2, and the amount exceeding a predetermined scale line of the cup 2 is returned to the tank 1, to obtain a predetermined amount of specimen solution to be poured into a density or concentration adjuster 3. In a dilution liquid tank 4, solvent of the type mentioned above is filled, so that desired amount of solvent may be added to the adjuster 3 and stirred to obtain the desired diluted solution. Or, alternatively, the solution poured from the cup 2 into the adjuster 3 may be heated within the concentration adjuster 3 so as to evaporate solvent to obtain a predetermined concentration of the solution. Thus, a solution specimen of desired percentage of solution obtained by concentration or dilution is moved from the adjuster 3 into a dripper 5, to drip the solution onto a porous sheet, such as a filter paper, fed one by one from a sheet feeder 6 onto a sheet holder 7. The sheet with the dripped solution specimen therein is further fed to a drier 8, where it is dried. At this stage, the solvent is evaporated, and therefore only solute, which had been dissolved in a predetermined amount of solution, remains on and in the sheet. The sheet is then further fed to a fluorescent X-ray analyzing device

9, where the sheet is placed in vacuum or gas atmosphere and, the primary X-rays are irradiated, therein and the fluorescent X-rays from the solute in the sheet detected, the sheet at this stage not bearing any solvent, which is easily evaporated. In a so-called ON LINE system, there is a need to automatically adjust the concentration of the plating fluid, etc. according to the result of the fluorescent X-ray analysis, and an automatic concentration controller 10 may be provided in order to automatically adjust the solution concentration of the tank 1. By inputting an output signal from the analyzing device 9 into this automatic controller 10, necessary addition of some chemicals into the tank 1 according to the result of the analysis may be possible. Thus the composition of the plating liquid may automatically be controlled. The adjusted plating liquid thus may be supplied into a plating liquid bath, not shown. If desired, the heating mechanism of the solution attached to the concentration adjuster 3 may be dispensed with. In place thereof, the sheet after being dried by the drier 8 is fed back to the holder 7, as shown by a dotted line in FIG. 1, repeatedly. By repeating the feedback, dripping by the dripper 5, and drying by the drier 8, the desired concentration of the solution may be obtained.

In the example of FIG. 2, the specimen used is the plating liquid for plating Zn-Ni alloy onto a metal plate. The characteristic X-ray of the zinc included in the specimen liquid is measured. In the graph of FIG. 2, the amount (g) of zinc in a solution of one liter (l) is given on the X-coordinate, while the count of the characteristic X-ray is given on the Y-coordinate. In ordinary cases, in the plating liquid for Zn-Ni alloy has, sulfate

ions (SO₄²⁻) of Na, Fe, etc. other than SAn and Ni added, and the concentration thereof relative to the plating liquid changes from time to time. Therefore, although the amount of element to be analyzed is constant, the fluorescent X-ray intensity of the element to be analyzed varies much according to the influence of concomitants. FIG. 2 shows the above-mentioned, fact for the measured results of five specimens with different amounts of concomitants, when the amount of Zn is 35, 68, 101, 136 and 169 g/l, respectively. As will be seen from the graph, the measured results are much affected by the concomitants included in the solution specimens. Even by any ordinary correction of the results, much precision in the results will not be expected. On the other hand, FIG. 3 shows the results according to the present invention using the solution specimen diluted to 20 times as thin as the specimens of FIG. 2, respectively, each of which is dripped on the porous sheet of filter paper and then dried. According to this method, as will be seen from the graph of FIG. 3, the influence of concomitants may much be lessened. Thus, the error between the measured values becomes small, enabling a precise analysis, which will further be improved by adequate correction.

US-PAT-NO: 4326940

DOCUMENT-IDENTIFIER: US 4326940 A

TITLE: Automatic analyzer and control system for
electroplating baths

DATE-ISSUED: April 27, 1982

US-CL-CURRENT: 204/232; 118/688 ; 118/689 ; 204/406 ;
422/62 ; 422/70 ; 422/81
; 427/345 ; 427/8 ; 702/25

APPL-NO: 06/ 040505

DATE FILED: May 21, 1979

----- KWIC -----

Brief Summary Text - BSTX:

In the past the use of chromatographic separation
techniques that are
reproducible provided proper detection is also employed may
show buildup of
materials not deliberately added to the electroplating
solution. If
correlative changes in the concentration of these
non-deliberately added
compounds with the change in plating performance are noted,
the electroplater
may be able to anticipate changes in performance before
they adversely affect
the quality of his work.

US-PAT-NO: 5196096

DOCUMENT-IDENTIFIER: US 5196096 A

TITLE: Method for analyzing the addition agents in
solutions for
electroplating of PbSn alloys

DATE-ISSUED: March 23, 1993

US-CL-CURRENT: 205/775; 204/405 ; 204/413 ; 204/434

APPL-NO: 07/ 857024

DATE FILED: March 24, 1992

----- KWIC -----

Brief Summary Text - BSTX:

A quantitative analytical technique, liquid chromatography,
is available for
some of the components of some electroplating solutions

(see S. S. Heberling,
D. Campbell, and S. Carson, PC Fab, Aug. 1989, p. 72).

One of the more useful
examples is the HPLC analysis of the MD (or Carrier)
component of the SelRex
Cubath M-Hy acid copper plating solution. Even in this
particular plating
solution, however, some of the additive components cannot
be separated or
detected with HPLC. The chromatographic analysis thus
allows only partial
control of the plating process.

US-PAT-NO: 5196096

DOCUMENT-IDENTIFIER: US 5196096 A

TITLE: Method for analyzing the addition agents in
solutions for
electroplating of PbSn alloys

----- KWIC -----

A quantitative analytical technique, liquid chromatography,
is available for
some of the components of some electroplating solutions
(see S. S. Heberling,
D. Campbell, and S. Carson, PC Fab, Aug. 1989, p. 72).
One of the more useful
examples is the HPLC analysis of the MD (or Carrier)
component of the SelRex
Cubath M-Hy acid copper plating solution. Even in this
particular plating
solution, however, some of the additive components cannot
be separated or
detected with HPLC. The chromatographic analysis thus
allows only partial
control of the plating process.

US-PAT-NO: 4326940

DOCUMENT-IDENTIFIER: US 4326940 A

TITLE: Automatic analyzer and control system for
electroplating baths

----- KWIC -----

In the past the use of chromatographic separation techniques that are reproducible provided proper detection is also employed may show buildup of materials not deliberately added to the electroplating solution. If correlative changes in the concentration of these non-deliberately added compounds with the change in plating performance are noted, the electroplater may be able to anticipate changes in performance before they adversely affect the quality of his work.

US-PAT-NO: 6379520
DOCUMENT-IDENTIFIER: US 6379520 B1

TITLE: Plating apparatus

DATE-ISSUED: April 30, 2002

US-CL-CURRENT: 205/81; 204/238 ; 204/263 ; 204/269

APPL-NO: 09/ 601084

DATE FILED: July 27, 2000

FOREIGN-APPL-PRIORITY-DATA:		
COUNTRY	APPL-NO	APPL-DATE
JP	10-340576	November 30,
1998		
JP	10-342611	December 2, 1998

PCT-DATA:

APPL-NO: PCT/JP99/06600
DATE-FILED: November 26, 1999
PUB-NO: WO00/32850
PUB-DATE: Jun 8, 2000
371-DATE: Jul 27, 2000
102(E)-DATE: Jul 27, 2000

----- KWIC -----

Brief Summary Text - BSTX:

The control section is provided with a regulating tank to regulate the composition and/or concentration of the plating solution; a replenishing mechanism for injecting plating solution and replenishing additives; an analyzer for analyzing components and/or measuring the concentration of the plating solution; a recovering apparatus for removing metallic ions contained in the wash solution after processing or for removing the ions and recovering the wash water; and a plating solution recovering apparatus

for extracting
plating solution from the regulating tank, removing foreign
matter from the
plating solution, and regulating the metallic ion
concentration and hydrogen
ion index. Accordingly, the plating apparatus is capable
of processing wash
water and recovering used plating solution. Hence, most of
these processes are
effectively performed in the second room housing the
control section, thereby
preventing contamination in the first room, which is
required to have a high
degree of cleanliness, and improving the efficiency of
maintenance operations.

Detailed Description Text - DETX:

Next, the plating solution 11-1 is stored in the plating liquid recovering tank
43. Into the plating solution recovering tank 43, a first
additive 50 is
supplied by pump 55 from the additive solution tank 44, a
second additive 51 is
supplied by pump 56 from the additive solution tank 45, a
copper sulfate
solution 52 is supplied by pump 57 from the copper sulfate
solution tank 46, a
sulfuric acid solution 53 is supplied by pump 58 from the
sulfuric acid tank
47, and a hydrochloric acid solution 54 is supplied by pump
59 from the
hydrochloric acid tank 48.

Detailed Description Text - DETX:

The above-described solutions are supplied in order to add
appropriate amounts
of components to the plating solution. The highly
concentrated copper sulfate
solution 52 is added to achieve an appropriate
concentration of copper ions.
The sulfuric acid solution 53 and hydrochloric acid
solution 54 are added to
regulate the hydrogen ion index (PH value) and the
concentration of chlorine

ions. The organic first additive 50 and second additive 51 are added to regulate the plating solution 11-1. After the plating solution 11-1 has been regulated, the pump 12-16 supplies the plating solution 11-1 to the regulating tank 12-1 via the filter 12-17. In addition, the plating liquid recovering tank 43 is replenished with a pure water 61 supplied via a shutoff valve 60 when needed.

US-PAT-NO: 6369384

DOCUMENT-IDENTIFIER: US 6369384 B1

TITLE: Time-of-flight mass spectrometer with
post-deflector filter assembly

DATE-ISSUED: April 9, 2002

US-CL-CURRENT: 250/287; 250/281 ; 250/282 ; 250/283 ;
250/294 ; 250/396R

APPL-NO: 09/ 339261

DATE FILED: June 23, 1999

----- KWIC -----

Brief Summary Text - BSTX:

In TOFMS, it is often desirable to remove ions having a certain mass from the mass spectrum before the ions contact a detector. For example, it may be desirable to remove ions of a certain mass from the mass spectrum because the quantity of those ions is orders of magnitude higher than the ions of interest, or because the removed ions are from a known material that is of no interest to the analysis.

US-PAT-NO: 6328885
DOCUMENT-IDENTIFIER: US 6328885 B1

TITLE: Current-efficient suppressors

DATE-ISSUED: December 11, 2001

US-CL-CURRENT: 210/198.2; 204/632 ; 204/638 ; 204/639 ;
210/243 ; 210/635
; 210/638 ; 210/656 ; 210/659 ; 422/70

APPL-NO: 09/ 512414

DATE FILED: February 24, 2000

PARENT-CASE:

This is a division of application Ser. No. 09/232,116
filed Jan. 15, 1999,
now U.S. Pat. No. 6,077,434.

----- KWIC -----

Detailed Description Text - DETX:

As set out above, electrochemical suppressor device of the type described above can be used in a pretreatment device prior to analysis of the analyte. One pretreatment device and system is illustrated in U.S. Pat. No. 5,597,481, incorporated herein by reference. This pretreatment device is substantially the same as the foregoing suppressor. The matrix ion which is removed in the pretreatment device is of opposite charge to the analyte ion. The improvements in current efficiency described herein are also applicable to the pretreatment device as set forth in the patent.

US-PAT-NO: 6077434

DOCUMENT-IDENTIFIER: US 6077434 A

TITLE: Current-efficient suppressors and method of use

DATE-ISSUED: June 20, 2000

US-CL-CURRENT: 210/635; 204/520 ; 204/542 ; 210/198.2 ;
210/638 ; 210/656
; 210/659

APPL-NO: 09/ 232116

DATE FILED: January 15, 1999

----- KWIC -----

Detailed Description Text - DETX:

As set out above, electrochemical suppressor device of the type described above can be used in a pretreatment device prior to analysis of the analyte. One pretreatment device and system is illustrated in U.S. Pat. No. 5,597,481, incorporated herein by reference. This pretreatment device is substantially the same as the foregoing suppressor. The matrix ion which is removed in the pretreatment device is of opposite charge to the analyte ion. The improvements in current efficiency described herein are also applicable to the pretreatment device as set forth in the patent.

US-PAT-NO: 6066440
DOCUMENT-IDENTIFIER: US 6066440 A

TITLE: Silver halide photosensitive material and method
for forming image

DATE-ISSUED: May 23, 2000

US-CL-CURRENT: 430/354; 430/203 ; 430/351 ; 430/383 ;
430/405 ; 430/640
; 430/642

APPL-NO: 09/ 035205

DATE FILED: March 5, 1998

FOREIGN-APPL-PRIORITY-DATA:		
COUNTRY	APPL-NO	APPL-DATE
JP	9-067396	March 5, 1997
JP	9-261013	September 9,
1997		

----- KWIC -----

Detailed Description Text - DETX:

100 g of gelatin a was dissolved in 900 g of water and was kept at 50.degree.
C. By repeating this procedure, three aqueous solutions were prepared, and these solutions were designated as B1, B2 and B3, respectively. The pH of these aqueous gelatin solutions was adjusted to 9.0 by the addition of sodium hydroxide. These aqueous gelatin solutions were then admixed with 3.8 g, 6.5 g and 8.4 g of acetic anhydride, respectively, and kept at 50.degree. C. for 1 hour while keeping the pH in the range of 8.5 to 9.5 by the addition of sodium hydroxide with stirring. Then, the pH was adjusted to 5.0 by the addition of sulfuric acid. After the excess ions were removed by means

of an ion-exchange

resin, the --NH.sub.2 groups and --NH-- groups in the gelatin of each of the solutions were quantitatively measured by means of formol titration and amino acid analysis, and the results are shown in Table 2.

Detailed Description Text - DETX:

100 g of gelatin a was dissolved in 900 g of water and was kept at 50.degree.

C. By repeating this procedure, three aqueous solutions were prepared, and these solution were designated as E1, E2 and E3, respectively. The pH of these aqueous gelatin solutions was adjusted to 10.5 by the addition of sodium hydroxide. These aqueous gelatin solutions were admixed with 15.1 g, 19.6 g and 26.1 g of acetyl iodide, respectively, and kept at 50.degree. C. for 1 hour while keeping the pH in the range of 10 to 11 by the addition of sodium hydroxide with stirring. Then, the pH was adjusted to 5.0 by the addition of sulfuric acid. After the excess ions were removed by means of an ion-exchange resin, the --NH-- groups in the gelatin of each of the solutions were quantitatively measured by means of formol titration and amino acid analysis, and the results are shown in Table 5.

Detailed Description Text - DETX:

100 g of gelatin .alpha. was dissolved in 900 g of water and was kept at 50.degree. C. By repeating this procedure, three aqueous solutions were prepared, and these solution were designated as F1, F2 and F3, respectively. The pH of these aqueous gelatin solutions was adjusted to 9.0 by the addition of sodium hydroxide. These aqueous gelatin solutions were admixed with 3.0 g, 5.2 g and 6.8 g of o-sulfobenzoic anhydride, respectively,

and kept at 50.degree. C. for 2 hours while keeping the pH in the range of 8.5 to 9.0 by the addition of sodium hydroxide with stirring. Then, the pH was adjusted to 5.0 by the addition of sulfuric acid. After the excess ions were removed by means of an ion-exchange resin, the --SO.sub.3 H groups in the gelatin of each of the solutions were quantitatively measured by means of amino acid analysis, and the results are shown in Table 6.

Detailed Description Text - DETX:

100 g of gelatin a was dissolved in 900 g of water and was kept at 50.degree. C. By repeating this procedure, three aqueous solutions were prepared, and these solution were designated as G1, G2 and G3, respectively. The pH of these aqueous gelatin solutions was adjusted to 9.0 by the addition of sodium hydroxide. These aqueous gelatin solutions were admixed with 7.4 g, 13.0 g and 17.1 g of sodium benzaldehyde-2,4-disulfonate, respectively, and kept at 50.degree. C. for 10 hours while keeping the pH in the range of 8.5 to 9.0 by the addition of sodium hydroxide with stirring. Then, the pH was adjusted to 5.0 by the addition of sulfuric acid. After the excess ions were removed by means of an ion-exchange resin, the --SO.sub.3 groups in the gelatin of each of the solutions were quantitatively measured by means of formol titration and amino acid analysis, and the results are shown in Table 7.

US-PAT-NO: 6030844
DOCUMENT-IDENTIFIER: US 6030844 A

TITLE: Method and apparatus for pre-analyzing treatment
for subsequent
analysis of metal components in volatile alkali solution
and non-volatile anion
in volatine acid solution and method and apparatus for the
subsequent analysis

DATE-ISSUED: February 29, 2000

US-CL-CURRENT: 436/178; 204/522 ; 204/529 ; 204/532 ;
436/150 ; 436/161
; 436/73

APPL-NO: 08/ 912398

DATE FILED: August 18, 1997

FOREIGN-APPL-PRIORITY-DATA:		
COUNTRY	APPL-NO	APPL-DATE
JP	8-216401	August 16, 1996

----- KWIC -----

Brief Summary Text - BSTX:

The foregoing analyzing method and apparatus are applicable
but only to ionic
components having the opposite charge to the ions having
been removed by the
pre-analyzing treatment, for which reason in case of
ammonia solution the anion
components may be analyzed by the conventional technique
but metal components
could -never analyzed.

US-PAT-NO: 5932174
DOCUMENT-IDENTIFIER: US 5932174 A

TITLE: Device for chloride ion removal prior to chemical
oxygen demand
analysis

DATE-ISSUED: August 3, 1999

US-CL-CURRENT: 422/79; 422/101 ; 422/59 ; 422/61 ; 436/145
; 436/146 ; 436/175
; 436/62

APPL-NO: 08/ 866466

DATE FILED: May 30, 1997

PARENT-CASE:

This is a continuation of application(s) Ser. No.
08/533,318 filed on Sep. 25,
1995 and which designated the U.S. Pat. No. 5,667,754.

----- KWIC -----

TITLE - TI:

Device for chloride ion removal prior to chemical oxygen
demand analysis

US-PAT-NO: 5892070
DOCUMENT-IDENTIFIER: US 5892070 A

TITLE: Transgenic non-human mammals producing
oligosaccharides and
glycoconjugates

DATE-ISSUED: April 6, 1999

US-CL-CURRENT: 800/14; 435/69.1 ; 800/15 ; 800/16 ; 800/17
; 800/18

APPL-NO: 08/ 715259

DATE FILED: September 10, 1996

PARENT-CASE:

This application is a Continuation of application Ser. No.
08/209,132, which
was filed on Mar. 9, 1994 now abandoned.

----- KWIC -----

Detailed Description Text - DETX:

The evaporated oligosaccharide extracts, obtained as
described in Example 3,
were analysed and separated employing a combination of high
pressure liquid and
ion exchange chromatography on a Dionex apparatus as
described previously by
Reddy and Bush (Analytical Biochemistry, Volume 198, pages
278-284, 1991) and
Townsend and Hardy (Glycobiology, Volume 1, pages 139-147,
1991). These
techniques are well known and standard in the art. The
specifics of the
experimental set-up, elution profiles and conditions for
separation and
analysis of the oligosaccharide extracts were as follows:
The Dionex apparatus
was fitted with a degasser to remove CO2 from the elution

buffers, an ion
suppressor to eliminate ions from the column eluants and an
on-line
conductivity meter to assure the removal of ions by the ion
suppressor. The
chromatography parameters were as follows:

US-PAT-NO: 5750176

DOCUMENT-IDENTIFIER: US 5750176 A

TITLE: Transgenic non-human mammal milk comprising
2'-fucosyl-lactose

DATE-ISSUED: May 12, 1998

US-CL-CURRENT: 426/580; 424/530 ; 426/556 ; 426/587 ;
426/588 ; 530/832 ; 800/7

APPL-NO: 08/ 208889

DATE FILED: March 9, 1994

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Detailed Description Text - DETX:

The evaporated oligosaccharide extracts, obtained as described in Example 3, were analysed and separated employing a combination of high pressure liquid and ion exchange chromatography on a Dionex apparatus as described previously by Reddy and Bush (Analytical Biochemistry, Volume 198, pages 278-284, 1991) and Townsend and Hardy (Glycobiology, Volume 1, pages 139-147, 1991). These techniques are well known and standard in the art. The specifics of the experimental set-up, elution profiles and conditions for separation and analysis of the oligosaccharide extracts were as follows: The Dionex apparatus was fitted with a degasser to remove CO₂ from the elution buffers, an ion suppresser to eliminate ions from the column eluants and an on-line conductivity meter to assure the removal of ions by the ion suppresser. The chromatography parameters were as follows:

US-PAT-NO: 5073505
DOCUMENT-IDENTIFIER: US 5073505 A

TITLE: Eluant storage and preparation apparatus and method
for using the same
in a zero gravity environment

DATE-ISSUED: December 17, 1991

US-CL-CURRENT: 436/178; 210/660 ; 210/681 ; 422/68.1 ;
422/70 ; 436/179

APPL-NO: 07/ 544765

DATE FILED: June 27, 1990

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Brief Summary Text - BSTX:

The present invention relates to an apparatus for efficiently storing concentrated eluant, preparing dilute eluant, and recycling water used for diluting the eluant. Further disclosed is a process for using the present apparatus to prepare dilute eluant for use in water quality analysis. The apparatus is comprised of a concentrated eluant reservoir, a sample loop, means for introducing concentrated eluant into the sample loop, a means for introducing water into the sample loop, a dilute eluant reservoir, a water reservoir, a means for analyzing chemical groups, a means for removing ions, and a means for detecting ions.

Brief Summary Text - BSTX:

Concentrated eluant is transported from the concentrated eluant reservoir into

a sample loop. Water is introduced through the sample loop from the water reservoir, flushing the concentrated eluant from the sample loop into the dilute eluant reservoir. Additional water is then added to the dilute eluant reservoir to prepare the desired concentration of the eluant. The dilute eluant is used in a process for analyzing the chemical groups. A spent eluant stream, a by-product of the analysis, is intimately contacted with the means for removing ions, thereby reclaiming the water. A means for detecting ions is used to determine when acceptable water quality has been achieved.

Detailed Description Text - DETX:

As shown in the Figure, which is meant to be exemplary not limiting, the eluant preparation apparatus of the present invention is composed of: a concentrated eluant reservoir (10), valves (20, 40, 140), pumps (30, 60, 90), a means for removing ions (80), a means for detecting ions (110), a water reservoir (70), a sample loop (50), dilute eluant reservoir (130), and a means for analyzing chemical groups (120).

Claims Text - CLTX:

g. deionizing the analyzed dilute eluant by passing the analyzed dilute eluant through a means for removing ions from the analyzed dilute eluant and reclaiming the water and said process is performed in a zero gravity environment.

US-PAT-NO: 4554254

DOCUMENT-IDENTIFIER: US 4554254 A

TITLE: Protein assay by silver binding

DATE-ISSUED: November 19, 1985

US-CL-CURRENT: 436/86; 436/164 ; 436/175

APPL-NO: 06/ 682338

DATE FILED: December 17, 1984

FOREIGN-APPL-PRIORITY-DATA:		
COUNTRY	APPL-NO	APPL-DATE
CA	469261	December 4, 1984

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Claims Text - CLTX:

17. A method according to claim 16 wherein the protein containing sample solution includes analysis interfering ions and is pretreated with drained gel permeation beads to remove such ions.

US-PAT-NO: 4403039

DOCUMENT-IDENTIFIER: US 4403039 A

TITLE: Method and apparatus for analysis of ionic species

DATE-ISSUED: September 6, 1983

US-CL-CURRENT: 436/150; 210/198.2 ; 210/656 ; 210/662 ;
422/70 ; 436/80
; 436/81

APPL-NO: 06/ 309905

DATE FILED: October 9, 1981

FOREIGN-APPL-PRIORITY-DATA:		
COUNTRY	APPL-NO	APPL-DATE
JP	80-151554	October 29, 1980
JP	80-151555	October 29, 1980

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Brief Summary Text - BSTX:

It is an object of this invention to overcome the drawbacks of the prior art as hereinabove pointed out, and provide a method of, and an apparatus for analyzing an ionic species of a particular sign which can remove an ionic species of the opposite sign from an eluate from a separation column without requiring any regeneration of the deionizer composition, and without destroying the peak form of the ionic species of interest.

Claims Text - CLTX:

1. In a method for the chromatographic quantitative analysis of a sample solution containing at least one ionic species of interest paired with at least

one ionic species of the opposite sign, said method including transporting a prescribed quantity of said sample solution with an eluant solution, introducing said solution into a separation column packed with an ion exchange resin to separate said ionic species of interest from said ionic species of the opposite sign, deionizing an eluate from said column and said eluant solution to remove said ionic species of the opposite sign therefrom, and measuring the electric conductivity of said eluate to thereby determine the concentration of said ionic species of interest in said sample solution, the improvement which comprises introducing said eluate into an inner passage of a deionizer having a single concentric double tubular construction, while a scavenger solution is introduced into an outer passage of said deionizer in a direction of flow opposite to that of said eluate in said inner passage, said inner passage being defined by a first tube of an ion exchange composition and provided with an inlet and an outlet for said eluate, said outer passage being defined by a second tube of a liquid-tight material other than an ion exchange composition encircling said first tube in radially spaced apart relation therefrom, and provided with an inlet and an outlet for said scavenger solution, said inner and outer passages being arranged independently of each other and said inlets and outlets of each of said inner and outer passage communicating with the outside, fluidally connecting said outlet of said inner passage to a conductive meter, whereby said ionic species of the opposite sign is removed from said inner passage into said scavenger solution in said outer passage through the wall of said first tube without impairing the peak form of said ionic species of interest separated by said column.

US-PAT-NO: 5279972

DOCUMENT-IDENTIFIER: US 5279972 A

TITLE: Process for analyzing samples for ion analysis

DATE-ISSUED: January 18, 1994

US-CL-CURRENT: 436/178; 210/500.23 ; 210/500.37 ; 210/638 ;
210/641 ; 210/650
; 210/653 ; 210/656 ; 422/70 ; 436/161 ; 436/177

APPL-NO: 07/ 827190

DATE FILED: January 28, 1992

PARENT-CASE:

REFERENCE TO RELATED APPLICATION This is a divisional of
copending application
Ser. No. 318,034 filed on Mar. 2, 1989, now abandoned,
which is a
continuation-in-part application of application Ser. No.
249,011, filed Sep.
26, 1988, now abandoned.

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Current US Cross Reference Classification - CCXR:

210/656

Other Reference Publication - OREF:

Jones et al., "Elimination of Matrix Interferences in Ion
Chromatographic
Analysis of Difficult Aqueous Samples", J. of
Chromatographic Sc., 27, 1989,
449-455.

US-PAT-NO: **4326940**

DOCUMENT-IDENTIFIER: US 4326940 A

TITLE: Automatic analyzer and control system for electroplating baths

DATE-ISSUED: April 27, 1982

US-CL-CURRENT: 204/232; 118/688 ; 118/689 ; 204/406 ;
422/62 ; 422/70 ; 422/81
; 427/345 ; 427/8 ; 702/25

APPL-NO: 06/ 040505

DATE FILED: May 21, 1979

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US PATENT NO. - PN:

4326940

Detailed Description Text - DETX:

Although all components of a process may not absorb ultraviolet radiation, a large variety of organic molecules, all metallic ions, and most anions may affect the current being evolved between two electrodes kept at a known potential or pulsed at regular voltage steps. The electrochemical detector 12, which may be one sold by Princeton Applied Research, Model 303, Dropping Mercury Electrode System with a flow cell adapter in combination with the potentiostat voltage supply source 93, such as a Princeton Applied Research Model 364 polarographic analyzer, which delivers a controlled voltage to the electrodes of the detector 12. If a mobile phase solvent is being passed

between the electrodes of the detector 12, which are located in a conventional flow cell, a constant amperage due to reduction or oxidation of the solvent at the working electrode, which is preferably a glassy carbon electrode (G.C.E.) or a dropping mercury electrode (D.M.E.), is present. This amperage is subject to radical changes if a component passes the working electrode that is oxidized or reduced. The change in current at the working electrode is, as in the case of the ultraviolet radiation absorption, proportional to the concentration of the component being oxidized or reduced, although such a proportional relation may not necessarily be a linear one. In electroplating solutions, all metal ions that can be reduced and all active brightener components affect reduction at the cathode. Therefore, the electrochemical detector 12 is particularly useful for analysis and/or control of electroplating solutions. The output information from the electrochemical detector 12 may be delivered via line 95 to the recorder 13 for handling, i.e. recording and effective integration, essentially in the same manner that the data from the ultraviolet detector 11 is handled by the recorder 13.